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The Dairy Situation in California--1947

J. M. Tinley

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Table 1

Population of United States, Western States, and California<sup>a</sup>

Year	Population			Per cent change, 1925=100		
	United States	Western States	California	United States	Western States	California
	Thousands			Per cent		
1925	114,867	10,509	4,634	100.0	100.0	100.0
1926	116,552	10,801	4,854	101.4	102.8	104.7
1927	118,197	11,093	5,073	102.9	105.6	109.5
1928	119,862	11,335	5,293	104.3	108.3	114.2
1929	121,516	11,677	5,513	105.8	111.1	119.0
1930	123,077	11,941	5,709	107.1	113.6	123.2
1931	124,039	12,122	5,824	108.0	115.3	125.7
1932	124,840	12,202	5,894	108.6	116.1	127.2
1933	125,578	12,330	5,963	109.3	117.3	128.7
1934	126,373	12,451	6,055	110.0	118.5	130.7
1935	127,250	12,686	6,175	110.8	120.7	135.3
1936	128,053	12,959	6,341	111.5	123.3	136.8
1937	128,824	13,253	6,523	112.2	126.1	140.9
1938	129,824	13,462	6,656	113.0	128.1	143.6
1939	130,879	13,680	6,785	113.9	130.2	146.4
1940	131,970	13,960	6,964	114.9	132.8	150.3
1941	135,203	14,283	7,228	116.0	135.9	156.0
1942	133,665	14,813	7,664	116.6	141.0	165.4
1943	136,497	16,151	8,468	118.8	153.7	182.7
1944	138,101	16,361	8,756	120.2	155.7	188.9
1945	139,800	16,385	8,823	121.7	155.9	190.4

<sup>a</sup> The data for the United States include estimates of population in the armed forces; those for California and Western States do not.

## Sources of data:

Compiled from U.S. Bur. Census. Annual Statistical Abstracts of the United States.

U.S. Bur. Census. Estimated Population of the United States by States: 1940 to 1945. Washington, D.C., 1946. (Series P-46, no. 3).



Table 2

Income from Salaries and Wages: United States, Western States, and California

Year	Income			Per cent change, 1929=100			Per cent change: Adjusted for growth in population		
	United States	Western states	California	United States	Western states	California	United States	Western states	California
Million dollars									
1929	52,450	5,614	3,173	100.0	100.0	100.0	100.0	100.0	100.0
1930	47,537	5,228	3,026	90.6	93.1	95.3	89.4	91.0	91.0
1931	39,901	4,413	2,575	76.1	78.6	81.2	74.5	75.7	76.9
1932	30,903	3,507	2,073	58.9	62.5	65.3	57.3	59.8	61.1
1933	28,579	3,205	1,901	54.5	57.1	59.9	52.8	54.1	55.4
1934	32,463	3,571	2,086	61.9	63.6	65.7	59.5	59.7	59.8
1935	35,457	3,986	2,307	67.6	70.9	72.7	64.6	65.3	64.9
1936	39,774	4,573	2,643	75.8	81.5	83.3	71.9	73.4	72.4
1937	44,425	5,148	2,971	84.7	91.7	93.6	79.9	80.8	79.1
1938	40,660	4,912	2,852	77.5	87.5	89.9	72.6	75.9	74.5
1939	43,749	5,221	3,030	83.4	93.0	95.5	77.4	79.4	77.6
1940	47,995	5,744	3,389	91.5	102.3	106.8	84.2	85.6	84.6
1941	59,943	7,293	4,350	114.3	129.9	137.1	104.3	106.2	104.6
1942	77,948	10,774	6,282	148.6	191.0	198.0	135.1	151.2	142.4
1943	95,981	14,273	8,541	183.0	254.2	269.2	163.0	183.8	175.3
1944	100,567	14,874	9,044	191.7	264.9	285.0	168.7	189.1	179.5
1945	96,692	14,480	8,847	188.2	257.9	278.8	163.6	183.8	174.2

Source of data: U.S. Bur. For. and Dom. Com. Survey of Current Business. Issues of July, 1942; August, 1944; and August, 1945.





Table 3

## Number of Dairy Cows in United States, Western States, and California

Year	Number of dairy cows			Per cent change, 1924=100			Number of cows per 100 population		
	United States	Western States	California	United States	Western States	California	United States	Western States	California
	Thousands			Per cent					
1925	21,503	1,903	573	100.0	100.0	100.0	18.7	18.1	12.4
1926	21,312	1,916	591	99.1	100.7	103.1	18.3	17.7	12.2
1927	21,191	1,930	601	98.5	101.3	104.9	17.9	17.4	11.8
1928	21,223	1,943	603	98.7	102.1	105.2	17.7	17.1	11.4
1929	21,618	1,977	610	100.5	103.9	106.5	17.8	16.9	11.1
1930	22,218	2,011	611	103.3	105.7	106.6	18.1	16.8	10.7
1931	23,108	2,067	614	107.5	108.6	107.2	18.6	17.0	10.5
1932	24,105	2,120	624	112.1	111.4	108.9	19.3	17.4	10.6
1933	25,062	2,188	630	116.6	115.0	109.9	20.0	17.7	10.6
1934	25,198	2,188	624	117.2	115.0	108.9	19.9	17.6	10.3
1935	24,276	2,091	615	112.9	109.9	107.4	19.1	16.5	10.0
1936	23,988	2,071	630	111.6	108.8	109.9	18.7	16.0	9.9
1937	23,710	2,063	634	110.3	108.4	110.6	18.4	15.6	9.7
1938	23,717	2,060	632	110.3	108.2	110.3	18.3	15.3	9.5
1939	23,923	2,081	638	111.3	109.4	111.3	18.3	15.2	9.4
1940	24,276	2,125	651	112.9	111.7	113.6	18.4	15.2	9.3
1941	24,361	2,299	740	113.3	120.8	129.1	18.3	16.1	10.2
1942	25,167	2,310	754	117.0	121.4	131.6	18.8	15.6	9.8
1943	25,663	2,341	757	119.3	123.0	132.1	18.8	14.5	8.9
1944	25,913	2,361	775	120.5	124.0	135.3	18.8	14.4	8.9
1945 <sup>a</sup>	25,515	2,324	800	118.7	122.1	139.6	18.3	14.2	9.1

<sup>a</sup> Preliminary.

Source of data: U.S. Dept. Agr., Bur. Agr. Econ. Farm Production, Disposition and Income from Milk. Annual Reports.

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Table 4

Production of Milk Fat in United States, Western States, and California

Year	Production			Per cent change, 1924=100			Production per capita		
	United States	Western States	California	United States	Western States	California	United States	Western States	California
	Million pounds			Per cent			Pounds		
1925	3,551	377	133	100.0	100.0	100.0	30.9	35.9	28.7
1926	3,659	383	130	103.0	101.6	97.7	31.3	35.5	26.8
1927	3,734	403	139	105.2	106.9	104.5	31.6	36.3	27.4
1928	3,762	407	140	105.9	108.0	105.3	31.4	36.7	26.4
1929	3,884	428	149	109.4	113.5	112.0	32.0	36.7	27.0
1930	3,929	438	152	110.6	116.2	114.3	31.9	36.7	26.6
1931	4,045	443	154	113.9	117.5	115.8	32.6	36.5	26.4
1932	4,079	444	156	114.9	117.8	117.3	32.7	36.4	26.5
1933	4,114	442	155	115.9	117.2	116.5	32.8	35.8	26.0
1934	3,996	443	153	112.5	117.5	115.0	31.6	35.6	25.3
1935	3,994	439	154	112.5	116.4	115.8	31.4	34.6	24.9
1936	4,056	443	154	114.2	117.5	115.8	31.7	34.2	24.3
1937	4,063	444	157	114.4	117.8	117.3	31.5	33.5	24.0
1938	4,227	454	159	119.0	120.4	118.0	32.6	33.7	23.9
1939	4,283	468	161	120.6	124.1	121.1	32.7	34.2	23.7
1940	4,379	484	166	123.3	128.4	124.8	33.2	34.7	23.8
1941	4,577	521	193	128.9	138.2	145.1	34.4	36.5	26.7
1942	4,731	539	197	133.2	143.0	148.1	35.4	36.4	25.6
1943	4,695	543	198	132.2	144.0	148.9	34.4	33.6	23.4
1944	4,728	555	208	133.1	147.2	156.4	34.2	33.9	23.8
1945 <sup>a</sup>	4,875	558	217	137.3	148.0	163.2	34.9	34.1	24.6

<sup>a</sup> Preliminary.

Source of data: U.S. Bur. Ag. Econ. Farm Production, Disposition, and Income from Milk. Annual Reports.



Table 5

## Disposition of Milk Produced on Farms

Disposition of milk	United States				Western States				California			
	1925	1935	1940	1945	1925	1935	1940	1945	1925	1935	1940	1945
	Quantities											
	Million pounds											
Farm usage:												
Fed to calves	2,784	2,686	3,090	3,301	318	330	395	430	120	109	136	154
Milk and cream consumed on farms	11,662	12,646	13,085	11,702	875	1,025	1,076	836	178	204	228	157
Farm butter consumed on farms	9,278	8,920	7,217	5,688	542	526	405	337	64	58	47	42
Sold by farmers:												
As farm butter	3,458	2,261	1,535	1,077	166	98	61	38	13	9	8	7
Cream sold wholesale	30,417	32,683	33,506	25,537	3,906	3,705	3,606	2,136	1,398	880	720	80
Milk sold wholesale	26,830	35,141	45,997	69,355	2,881	4,502	5,766	9,427	1,358	2,372	2,844	4,940
Milk sold retail	6,270	7,084	6,642	5,559	913	979	954	861	381	415	398	340
Total	90,699	101,421	111,072	122,219	9,601	11,165	12,263	14,065	3,512	4,047	4,381	5,720
	Per cent disposition											
Farm usage:												
Fed to calves	3.1	2.6	2.8	2.7	3.3	3.0	3.2	3.1	3.4	2.7	3.1	2.7
Milk and cream consumed on farms	12.9	12.5	11.8	9.6	9.1	9.2	8.8	5.9	5.1	5.0	5.2	2.7
Farm butter consumed on farms	10.2	8.8	6.5	4.7	5.7	4.7	3.3	2.4	1.8	1.4	1.1	0.7
Sold by farmers:												
As farm butter	3.8	2.2	1.4	0.9	1.7	0.9	0.5	0.3	0.4	0.2	0.2	0.1
Cream sold wholesale	33.5	32.3	30.1	20.9	40.7	33.2	29.4	15.2	39.8	21.8	16.4	1.4
Milk sold wholesale	29.6	34.6	41.4	56.7	30.0	40.3	47.0	67.0	38.7	58.6	64.9	86.4
Milk sold retail	6.9	7.0	6.0	4.5	9.5	8.7	7.8	6.1	10.8	10.3	9.1	6.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source of data: U.S. Bur. Agr. Econ. Farm Production, Disposition, and Income from Milk. Annual Reports.





Table 6

## Production of Milk Fat in California by Counties

(In 1,000 pounds milk fat)

Area and county	1925	1930	1935	1940	1945	1945 as per cent of 1925
North coast:	9,221	9,356	8,521	8,181	9,273	100.6
Del Norte	1,010	869	823	779	879	87.0
Humboldt	7,151	7,406	6,655	6,404	7,423	103.8
Mendocino	1,060	1,081	1,043	998	971	91.6
Mountain and desert:	4,632	6,292	5,279	5,351	3,979	85.9
Shasta	390	514	467	811	927	237.7
Siskiyou	1,293	1,946	1,821	1,641	980	75.5
Trinity	19	59	22	17	15	78.9
Lassen	594	824	448	403	254	42.8
Modoc	551	719	582	568	325	59.0
Plumas	187	360	253	239	166	88.8
Alpine	19	24	19	24	9	47.4
Amador	206	202	154	133	112	54.4
Calaveras	51	81	42	41	28	90.3
El Dorado	230	231	232	222	126	54.8
Inyo	202	177	60	79	75	37.1
Mariposa	4	9	3	1	1	25.0
Mono	19	57	49	15	8	42.1
Nevada	190	270	251	275	216	113.7
Placer	322	435	462	525	567	176.1
Sierra	302	271	330	313	133	44.0
Tuolumne	68	113	84	44	37	54.4
Central coast:	29,258	30,299	29,135	32,641	36,636	125.2
Alameda	2,491	2,591	2,575	2,284	2,422	97.2
Contra Costa	1,135	1,709	1,417	1,003	723	63.7
Lake	216	264	375	364	280	129.6
Marin	4,892	4,735	5,588	6,943	7,296	149.1
Monterey	4,968	5,252	4,054	3,606	3,384	68.1
Napa	698	880	860	808	1,207	172.9
San Benito	833	639	599	456	637	76.5
San Francisco	175	68	--	--	--	0.0
San Luis Obispo	3,548	3,305	3,281	3,180	3,113	87.7
San Mateo	1,654	1,732	1,151	1,385	1,556	94.1
Santa Clara	3,317	3,676	3,381	4,546	5,523	166.5
Santa Cruz	514	418	493	503	588	114.4
Sonoma	4,817	5,030	5,061	7,563	9,907	205.7
Sacramento Valley:	10,351	11,603	12,194	13,452	15,448	149.2
Butte	1,310	1,488	1,485	1,819	1,631	124.5
Colusa	696	842	1,066	668	514	73.9
Glenn	1,461	1,974	1,534	2,039	3,399	232.6
Sacramento	2,083	1,915	2,380	2,853	3,848	184.3

Continued





Table 6 (Cont'd.)

Area and county	1925	1930	1935	1940	1945	1945 as per cent of 1925
Solano	1,425	1,507	1,146	1,474	1,542	103.2
Sutter	666	1,066	1,008	1,129	1,143	171.6
Tehama	567	591	696	1,127	1,703	300.4
Yolo	1,726	1,695	2,092	1,439	977	56.6
Yuba	412	525	787	924	781	189.6
San Joaquin Valley:	45,176	56,175	53,015	66,843	83,685	185.2
Fresno	4,954	6,343	5,751	7,603	9,727	196.3
Kern	1,497	1,920	2,304	2,762	2,976	198.8
Kings	4,318	4,300	4,783	6,165	7,379	182.5
Madera	1,524	1,901	1,328	2,065	3,131	205.4
Merced	9,883	11,212	12,276	13,780	17,494	177.0
San Joaquin	6,723	8,550	7,198	9,702	11,399	169.6
Stanislaus	9,104	11,960	12,163	15,442	19,087	209.7
Tulare	7,173	9,489	7,212	9,324	11,992	167.2
Southern California:	26,405	38,207	36,520	50,443	56,355	213.4
Imperial	6,371	5,675	3,171	2,273	1,584	24.9
Los Angeles	11,878	17,303	21,272	32,282	34,669	291.9
Orange	1,564	2,794	2,430	3,490	4,644	296.9
Riverside	1,293	2,510	1,813	1,940	1,497	115.8
San Bernardino	1,760	4,579	2,240	3,152	5,200	295.5
San Diego	1,654	2,134	2,697	3,587	4,543	274.7
Santa Barbara	1,377	2,240	2,028	2,795	2,600	195.4
Ventura	509	672	869	924	1,528	300.2
State total	125,043	151,940	144,664	176,911	205,376	164.2
Per cent of total						
North coast	7.4	6.2	5.9	4.6	4.5	
Mountain and desert	3.7	4.1	3.7	3.0	1.9	
Central coast	23.4	19.9	20.1	18.5	17.8	
Sacramento Valley	8.3	7.6	8.4	7.6	7.5	
San Joaquin Valley	36.1	37.0	36.6	37.8	40.8	
Southern California	21.1	25.2	25.3	28.5	27.5	
	100.0	100.0	100.0	100.0	100.0	

Source of data: Cal. Dept. of Agric. Statistical Reports of California  
Dairy Products. Annual Reports.



Table 7

Total Production of Selected Fat-Containing Dairy  
Products in California, 1925-1945

Year	Market milk distributed	Market cream distributed	Milk and cream used on farms (m. equiv.)	All market milk and cream <sup>a</sup> (m. equiv.)	Total butter	Cheese	Evaporated and condensed whole milk	Powdered whole milk	Ice cream
	1	2	3	4	5	6	7	8	9
	Thousand gallons			Million pounds			Thousand pounds		
1925	101,706	5,766	178	1248.8	77,100	7,408	128,694	768	11,456
1926	108,363	5,905	174	1485.0	77,318	8,119	125,887	405	12,097
1927	123,177	6,128	172	1577.2	80,125	8,959	171,780	219	13,079
1928	128,827	6,525	172	1647.3	79,186	9,604	157,889	357	14,057
1929	132,000	7,075	172	1721.9	74,750	9,229	172,566	395	15,378
1930	131,774	7,389	180	1742.3	76,072	9,813	185,526	407	14,278
1931	132,419	7,604	187	1765.5	75,080	10,087	192,022	429	13,547
1932	127,857	6,670	190	1742.8	76,354	11,995	208,728	465	10,086
1933	122,104	6,019	201	1640.1	80,406	16,600	219,900	618	8,784
1934	128,155	5,993	196	1690.4	74,037	15,938	199,130	712	11,166
1935	133,442	6,510	204	1779.8	67,427	15,845	206,391	842	12,666
1936	146,223	7,013	205	1923.9	66,367	16,182	196,195	626	15,665
1937	149,024	7,349	210	1948.0	67,748	17,171	156,391	429	16,205
1938	151,829	7,871	211	2034.7	69,552	17,086	183,841	641	16,564
1939	164,631	8,504	224	2208.1	67,854	15,381	215,655	843	19,501
1940	173,464	8,897	201	2278.0	72,265	15,489	250,597	1,588	20,360
1941	186,035	8,751	196	2371.0	65,036	17,067	304,812	2,898	23,548
1942	219,668	7,308	178	2547.9	51,512	16,684	288,571	9,276	30,826
1943	267,504	3,313	173	2648.1	39,823	16,144	269,281	12,683	30,836
1944	288,588	4,040	157	2767.9	31,766	13,232	339,002	25,811	34,333
1945	329,800	4,074	157	3119.5	17,631	13,512	356,129	--	38,285

Continued





Table 7 (Cont'd.)

Year	Market milk distributed	Market cream distributed	Milk and cream used on farms (m. equiv.)	All market milk and cream <sup>a</sup> (m. equiv.)	Total butter	Cheese	Evaporated and condensed whole milk	Powdered whole milk	Ice cream
	1	2	3	4	5	6	7	8	9
	Thousand gallons		Million pounds		Thousand pounds				
1925-1929	118,815	6,280	174	1556.0	77,696	8,664	151,363	429	13,213
1930-1934	128,462	6,735	191	1716.2	76,390	12,889	201,061	526	11,573
1935-1939	149,030	7,449	211	1978.9	67,790	16,323	173,695	676	16,120
1940-1944	227,052	6,462	181	2522.6	52,080	15,723	290,453	10,451	27,981

<sup>a</sup> Gallons market milk converted to fluid milk equivalent by multiplying annual figures by 8.6.

Fluid milk equivalent of fluid cream obtained by calculating the amount of milk fat distributed annually in the form of cream (as reported by the Cal. Dept. of Agr.) and dividing such annual amounts by 3.8 per cent, which represents the average annual milk fat test of milk production in California.

Sources of data:

Cols. 1, 2, 5, 8, 9, 10, and 11 from: California Dept. of Agriculture. Statistical Reports of California Dairy Products; annual issues.

Cols. 3 and 6 from: U.S. Bur. of Agr. Econ. Farm Production, Disposition, and Income from Milk 1924-1940 and subsequent issues.

Col. 4 = Cols. 1 + 2 + 3.

Col. 7 = Cols. 5 + 6.



Table 8

Percentage Change in Total Production of Selected  
Fat-Containing Dairy Products in California

1925 = 100

Year	Market milk distributed	Market cream distributed	Milk and cream used on farms	All market milk and cream	Total butter	Cheese	Evaporated and condensed whole milk	Powdered whole milk	Ice cream
1925	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1926	106.5	102.4	97.8	110.1	100.3	109.6	97.8	52.7	105.6
1927	121.1	106.3	96.6	116.9	103.9	120.9	133.5	28.5	114.2
1928	126.7	113.2	96.6	122.1	102.7	129.6	122.7	46.5	122.7
1929	129.8	122.7	96.6	127.7	97.0	124.6	134.1	51.4	134.2
1930	129.6	128.1	101.1	129.2	98.7	132.5	144.2	53.0	124.6
1931	130.2	131.9	105.1	130.9	97.4	136.2	149.2	55.9	118.3
1932	125.7	115.7	106.7	129.2	99.0	161.9	162.2	60.5	88.0
1933	120.1	104.4	112.9	121.6	104.3	224.1	170.9	80.5	76.7
1934	126.0	103.9	110.1	125.3	96.0	215.1	154.7	92.7	97.5
1935	131.2	112.9	114.6	132.0	87.5	213.9	160.4	109.6	110.6
1936	143.8	121.6	115.2	142.6	86.1	218.4	152.5	81.5	136.7
1937	146.5	127.5	118.0	144.4	87.9	231.8	129.3	55.9	141.5
1938	149.3	136.5	118.5	150.9	90.2	230.6	142.9	83.5	144.6
1939	161.9	147.5	125.8	163.7	88.0	207.6	167.6	109.8	170.2
1940	170.6	154.3	112.9	168.9	93.7	209.1	194.7	206.8	177.7
1941	182.9	151.8	110.1	175.8	84.4	230.4	236.9	377.3	205.6
1942	216.0	126.7	100.0	188.9	66.8	225.2	224.2	1,207.8	269.1
1943	263.0	57.5	97.2	196.3	51.7	217.9	209.2	1,651.4	269.2
1944	283.7	70.1	88.2	205.2	41.2	178.6	263.4	3,360.8	299.7
1945	324.3	70.7	88.2	231.3	22.9	182.4	276.7	--	334.2
1925-1929 = 100									
1925-1929	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1930-1934	108.1	107.2	109.8	110.3	98.3	148.8	132.8	122.6	87.6
1935-1939	125.4	118.6	121.3	127.3	87.2	188.5	114.7	157.6	122.0
1940-1944	191.1	102.9	104.0	163.1	67.0	181.5	191.9	2,036.1	211.8

Source of data: Table 7.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840.

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Table 9

Per Capita Production of Selected Fat-Containing  
Dairy Products in California, 1925-1945

| Year      | Gallons                      |                               |   | Pounds                                     |                   |             |  |      | Powdered whole milk | Ice cream |
|-----------|------------------------------|-------------------------------|---|--|-------------------|-------------|--|------|---------------------|-----------|
|           | 1<br>Market milk distributed | 2<br>Market cream distributed | 3<br>Milk and cream used on farms (m. equiv.) | 4<br>All market milk and cream (m. equiv.) | 5<br>Total butter | 6<br>Cheese | 7<br>Evaporated and condensed whole milk | 8    |                     |           |
| 1925      | 21.95                        | 1.24                          | 38.41   | 291.07                                     | 16.64             | 1.60        | 27.77                                    | .17  | 2.47                |           |
| 1926      | 22.32                        | 1.22                          | 35.85   | 305.93                                     | 15.93             | 1.67        | 25.93                                    | .08  | 2.49                |           |
| 1927      | 24.28                        | 1.21                          | 33.90   | 310.90                                     | 15.79             | 1.77        | 33.86                                    | .04  | 2.58                |           |
| 1928      | 24.34                        | 1.23                          | 32.50   | 311.22                                     | 14.96             | 1.81        | 29.83                                    | .07  | 2.66                |           |
| 1929      | 23.94                        | 1.28                          | 31.20   | 312.33                                     | 13.56             | 1.67        | 31.30                                    | .07  | 2.79                |           |
| 1930      | 23.08                        | 1.29                          | 31.53   | 305.18                                     | 13.32             | 1.72        | 32.50                                    | .07  | 2.50                |           |
| 1931      | 22.74                        | 1.31                          | 32.11   | 303.14                                     | 12.89             | 1.73        | 32.97                                    | .07  | 2.33                |           |
| 1932      | 21.69                        | 1.13                          | 32.24   | 295.69                                     | 12.95             | 2.04        | 35.41                                    | .08  | 1.71                |           |
| 1933      | 20.48                        | 1.01                          | 33.71   | 275.05                                     | 13.48             | 2.78        | 36.88                                    | .10  | 1.47                |           |
| 1934      | 21.17                        | .99                           | 32.37   | 279.17                                     | 12.23             | 2.63        | 32.89                                    | .12  | 1.84                |           |
| 1935      | 21.61                        | 1.05                          | 33.04   | 288.23                                     | 10.92             | 2.57        | 33.42                                    | .14  | 2.05                |           |
| 1936      | 23.06                        | 1.11                          | 32.33   | 303.41                                     | 10.47             | 2.55        | 30.94                                    | .10  | 2.47                |           |
| 1937      | 22.83                        | 1.13                          | 32.17   | 298.41                                     | 10.38             | 2.63        | 25.49                                    | .07  | 2.48                |           |
| 1938      | 22.81                        | 1.18                          | 31.70   | 305.69                                     | 10.45             | 2.57        | 27.62                                    | .10  | 2.49                |           |
| 1939      | 24.26                        | 1.25                          | 33.01   | 325.44                                     | 10.00             | 2.27        | 31.78                                    | .12  | 2.87                |           |
| 1940      | 24.91                        | 1.28                          | 28.86   | 327.11                                     | 10.38             | 2.22        | 35.98                                    | .23  | 2.92                |           |
| 1941      | 25.74                        | 1.21                          | 27.12   | 328.03                                     | 9.00              | 2.36        | 42.17                                    | .40  | 3.26                |           |
| 1942      | 28.66                        | .95                           | 23.23   | 332.45                                     | 6.72              | 2.18        | 37.65                                    | 1.21 | 4.02                |           |
| 1943      | 31.59                        | .39                           | 20.43   | 312.72                                     | 4.70              | 1.91        | 31.80                                    | 1.50 | 3.64                |           |
| 1944      | 32.96                        | .46                           | 17.93   | 316.11                                     | 3.63              | 1.51        | 38.72                                    | 2.95 | 3.92                |           |
| 1945      | 37.38                        | .46                           | 17.79   | 353.56                                     | 2.00              | 1.53        | 40.36                                    | --   | 4.34                |           |
| 1925-1929 | 23.4                         | 1.24                          | 34.4  | 306.3                                      | 15.4              | 1.70        | 29.7                                     | .09  | 2.60                |           |
| 1930-1934 | 21.8                         | 1.15                          | 32.4  | 291.6                                      | 13.0              | 2.18        | 34.1                                     | .09  | 1.97                |           |
| 1935-1939 | 22.9                         | 1.14                          | 32.4  | 304.2                                      | 10.4              | 2.52        | 29.9                                     | .11  | 2.07                |           |
| 1940-1944 | 28.8                         | .86                           | 23.5  | 323.3                                      | 6.9               | 2.04        | 37.3                                     | 1.26 | 3.55                |           |

Source of data: Tables 1 and 7.



1. The first part of the paper is devoted to a general discussion of the problem.

2. In the second part, we shall consider the case of a single particle.

3. The third part is devoted to the case of a system of particles.

4. In the fourth part, we shall consider the case of a continuous medium.

5. The fifth part is devoted to the case of a system of continuous media.

6. In the sixth part, we shall consider the case of a system of particles and continuous media.

7. The seventh part is devoted to the case of a system of particles and continuous media.

8. In the eighth part, we shall consider the case of a system of particles and continuous media.

9. The ninth part is devoted to the case of a system of particles and continuous media.

10. In the tenth part, we shall consider the case of a system of particles and continuous media.

Table 10

Total Production of Selected Fat-Containing  
Dairy Products in the United States

| Year              | Butter <sup>a</sup> | Cheese  | Evaporated and<br>condensed<br>milk | Ice cream          | Powdered<br>whole milk | Market milk<br>and market<br>cream <sup>b</sup> |
|-------------------|---------------------|---------|-------------------------------------|--------------------|------------------------|---|
|                   | 1                   | 2       | 3                                   | 4                  | 5                      | 6   |
|                   | Million pounds      |         |                                     | Million<br>gallons | Million pounds         |   |
| 1925              | 1,982.0             | 443.5   | 1,757.9                             | 214.4              | 8.9                    | 40,422  |
| 1926              | 2,075.0             | 427.4   | 1,733.5                             | 215.2              | 10.8                   | 41,065  |
| 1927              | 2,105.0             | 406.7   | 1,855.7                             | 226.8              | 11.5                   | 41,587  |
| 1928              | 2,065.2             | 437.5   | 1,918.4                             | 232.2              | 9.6                    | 42,270  |
| 1929              | 2,140.3             | 483.9   | 2,206.6                             | 254.6              | 13.2                   | 43,084  |
| 1930              | 2,121.0             | 500.4   | 2,080.3                             | 240.7              | 15.4                   | 43,273  |
| 1931              | 2,211.8             | 492.4   | 1,970.1                             | 208.3              | 12.6                   | 43,316  |
| 1932              | 2,275.6             | 484.1   | 2,040.3                             | 154.6              | 12.0                   | 44,069  |
| 1933              | 2,342.5             | 543.7   | 2,142.0                             | 148.9              | 13.0                   | 44,065  |
| 1934              | 2,353.4             | 579.1   | 2,171.1                             | 179.6              | 15.9                   | 42,287  |
| 1935              | 2,171.5             | 620.7   | 2,331.2                             | 199.4              | 19.4                   | 42,974  |
| 1936              | 2,131.3             | 642.3   | 2,618.1                             | 243.5              | 18.2                   | 43,925  |
| 1937              | 2,096.2             | 648.8   | 2,507.6                             | 280.9              | 13.7                   | 44,253  |
| 1938              | 2,240.2             | 725.3   | 2,719.5                             | 281.9              | 21.5                   | 44,358  |
| 1939              | 2,210.4             | 708.5   | 2,744.6                             | 304.5              | 24.5                   | 45,223  |
| 1940              | 2,239.5             | 785.5   | 3,145.6                             | 318.1              | 29.4                   | 45,591  |
| 1941              | 2,267.7             | 956.2   | 4,057.1                             | 390.2              | 45.6                   | 46,900  |
| 1942              | 2,130.4             | 1,112.3 | 4,331.3                             | 464.1              | 62.2                   | 49,514  |
| 1943              | 2,014.1             | 993.3   | 3,976.6                             | 412.1              | 137.8                  | 53,921  |
| 1944              | 1,817.7             | 1,016.7 | 4,508.5                             | 445.2              | 177.8                  | 56,144  |
| 1945 <sup>c</sup> | 1,691.1             | 1,114.8 | 5,077.7                             | 471.3              | 217.9                  | --  |

<sup>a</sup> Includes butter made on farms.

<sup>b</sup> Includes milk and cream consumed on farms.

<sup>c</sup> Preliminary.

**Sources of data:**

Col. 1: Compiled by author from (a) U.S. Dept. Agr. Bur. Agr. Econ. Production of Manufactured Dairy Products. Annual Reports; (b) U.S. Dept. Agr. Bur. Agr. Econ. Farm Production, Disposition, and Income from Milk. Annual Reports.

Cols. 2, 3, 4, and 5: U.S. Dept. Agr. Bur. Agr. Econ. Production of Manufactured Dairy Products. Annual Reports.

Col. 6: Compiled by author from U.S. Dept. Agr. Bur. Agr. Econ. Farm Production, Disposition, and Income from Milk. Annual Reports.



Table 11

Percentage Change in Production of Selected Fat-Containing  
Dairy Products in the United States

| Year | Butter | Cheese | Evaporated and<br>condensed<br>milk | Ice cream | Powdered<br>whole milk | Market milk<br>and market<br>cream |
|------|--------|--------|-------------------------------------|-----------|------------------------|------------------------------------|
| 1925 | 100.0  | 100.0  | 100.0                               | 100.0     | 100.0                  | 100.0                              |
| 1926 | 104.7  | 96.4   | 98.6                                | 100.4     | 121.3                  | 101.6                              |
| 1927 | 106.2  | 91.7   | 105.6                               | 105.8     | 129.2                  | 102.9                              |
| 1928 | 104.2  | 98.6   | 109.1                               | 103.3     | 107.9                  | 104.6                              |
| 1929 | 108.0  | 109.1  | 125.5                               | 113.7     | 148.3                  | 106.6                              |
| 1930 | 107.0  | 112.8  | 118.3                               | 112.3     | 173.0                  | 107.1                              |
| 1931 | 111.6  | 111.0  | 112.1                               | 97.2      | 141.6                  | 107.2                              |
| 1932 | 114.8  | 109.2  | 116.1                               | 72.1      | 134.8                  | 109.0                              |
| 1933 | 118.2  | 122.6  | 121.8                               | 69.4      | 146.1                  | 109.0                              |
| 1934 | 118.7  | 130.6  | 123.5                               | 83.8      | 173.7                  | 104.6                              |
| 1935 | 109.6  | 140.0  | 132.6                               | 93.0      | 213.0                  | 106.3                              |
| 1936 | 107.5  | 144.8  | 148.9                               | 113.6     | 204.5                  | 108.7                              |
| 1937 | 105.8  | 146.3  | 142.6                               | 131.0     | 153.9                  | 109.5                              |
| 1938 | 113.0  | 163.5  | 154.7                               | 131.5     | 241.6                  | 109.7                              |
| 1939 | 111.5  | 159.8  | 156.1                               | 142.0     | 275.3                  | 111.9                              |
| 1940 | 113.0  | 177.1  | 178.9                               | 148.4     | 330.3                  | 112.8                              |
| 1941 | 114.4  | 215.6  | 230.3                               | 182.0     | 512.4                  | 116.0                              |
| 1942 | 107.5  | 250.8  | 246.4                               | 216.5     | 693.9                  | 122.5                              |
| 1943 | 101.6  | 224.0  | 226.2                               | 192.2     | 1,548.3                | 133.4                              |
| 1944 | 91.7   | 229.2  | 256.5                               | 207.6     | 1,993.9                | 138.9                              |
| 1945 | 85.3   | 251.4  | 282.9                               | 219.8     | 2,448.5                | --                                 |

Source of data: Table 10.

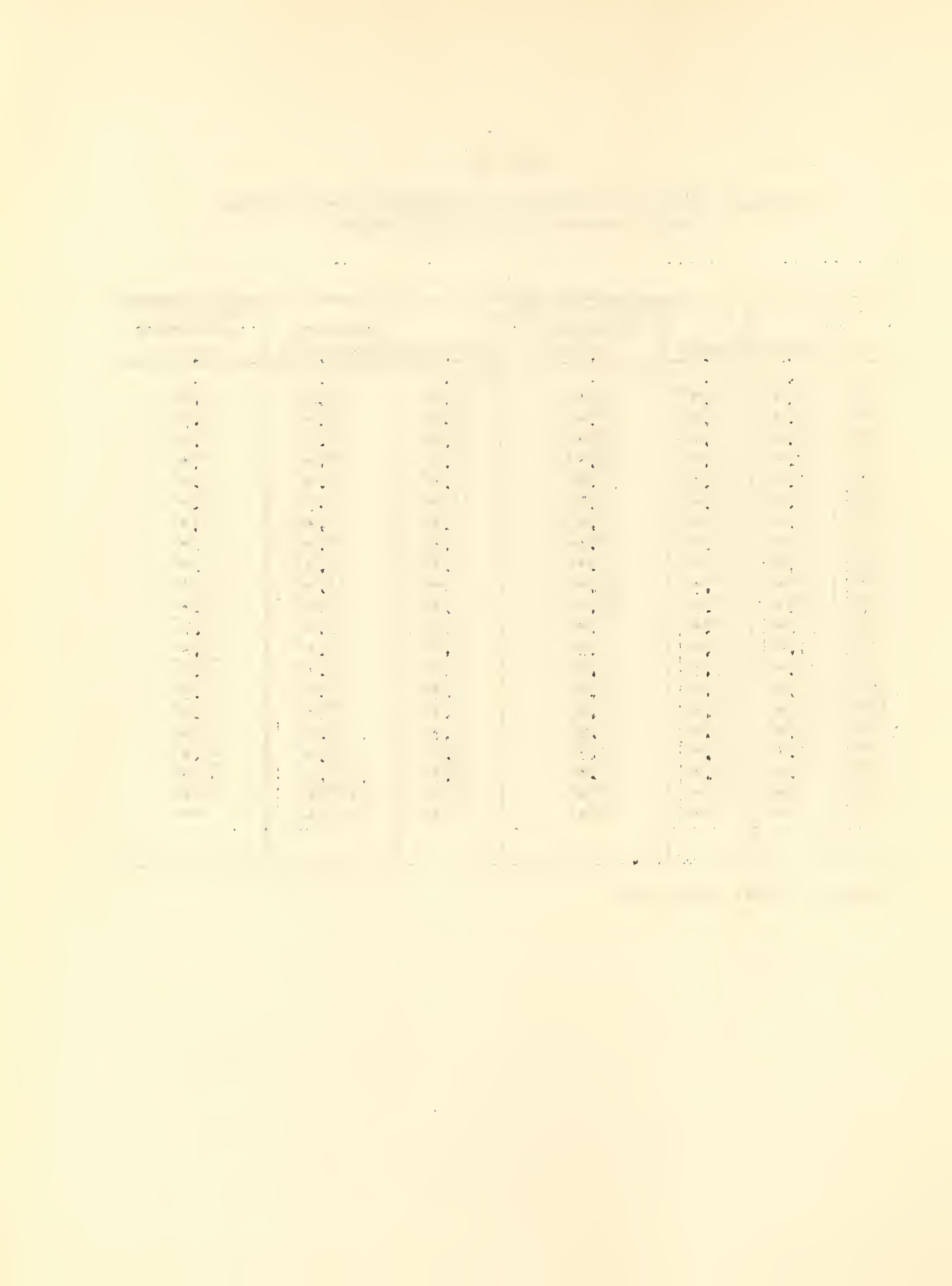




Table 12

Per Capita Production of Fat-Containing  
Dairy Products in the United States

| Year              | Butter <sup>a</sup> | Cheese | Evaporated and<br>condensed<br>milk | Ice cream | Powdered<br>whole milk | Market milk<br>and market<br>cream <sup>b</sup> |
|-------------------|---------------------|--------|-------------------------------------|-----------|------------------------|---|
|                   | Pounds              |        |                                     | Gallons   | Pounds                 |   |
| 1925              | 17.3                | 3.9    | 15.3                                | 1.9       | .08                    | 351.9   |
| 1926              | 17.8                | 3.7    | 14.9                                | 1.8       | .09                    | 352.4   |
| 1927              | 17.8                | 3.4    | 15.7                                | 1.9       | .10                    | 351.8   |
| 1928              | 17.2                | 3.7    | 16.0                                | 1.9       | .08                    | 352.7   |
| 1929              | 17.6                | 4.0    | 18.2                                | 2.1       | .11                    | 354.6   |
| 1930              | 17.2                | 4.1    | 16.9                                | 2.0       | .12                    | 351.6   |
| 1931              | 17.8                | 4.0    | 15.9                                | 1.7       | .10                    | 349.2   |
| 1932              | 18.2                | 3.9    | 16.3                                | 1.2       | .10                    | 353.0   |
| 1933              | 18.7                | 4.3    | 17.1                                | 1.2       | .10                    | 350.9   |
| 1934              | 18.6                | 4.6    | 17.2                                | 1.4       | .13                    | 334.6   |
| 1935              | 17.1                | 4.9    | 18.3                                | 1.6       | .15                    | 337.7   |
| 1936              | 16.6                | 5.0    | 20.4                                | 1.9       | .14                    | 343.0   |
| 1937              | 16.3                | 5.0    | 19.5                                | 2.2       | .11                    | 343.5   |
| 1938              | 17.3                | 5.6    | 20.9                                | 2.2       | .17                    | 341.7   |
| 1939              | 16.9                | 5.4    | 21.0                                | 2.3       | .19                    | 345.5   |
| 1940              | 17.0                | 6.0    | 23.8                                | 2.4       | .22                    | 345.5   |
| 1941              | 17.0                | 7.2    | 30.5                                | 2.9       | .34                    | 352.1   |
| 1942              | 15.9                | 8.3    | 32.4                                | 3.5       | .46                    | 370.4   |
| 1943              | 14.8                | 7.3    | 29.1                                | 3.0       | 1.01                   | 395.0   |
| 1944              | 13.2                | 7.4    | 32.6                                | 3.2       | 1.29                   | 406.5   |
| 1945 <sup>c</sup> | 12.1                | 8.0    | 36.3                                | 3.4       | 1.56                   |   |

<sup>a</sup> Includes butter made on farms.

<sup>b</sup> Includes milk and cream consumed on farms.

<sup>c</sup> Preliminary.

Source of data: Computed from tables 1 and 10.

| Date  | Description | Debit | Credit | Balance | Total | Remarks |
|-------|-------------|-------|--------|---------|-------|---------|
| 1890  | Jan 1       |       |        |         |       |         |
| Feb 1 | Jan 1       |       |        |         |       |         |
| Mar 1 | Jan 1       |       |        |         |       |         |
| Apr 1 | Jan 1       |       |        |         |       |         |
| May 1 | Jan 1       |       |        |         |       |         |
| Jun 1 | Jan 1       |       |        |         |       |         |
| Jul 1 | Jan 1       |       |        |         |       |         |
| Aug 1 | Jan 1       |       |        |         |       |         |
| Sep 1 | Jan 1       |       |        |         |       |         |
| Oct 1 | Jan 1       |       |        |         |       |         |

Total  
 1890

Table 13

Total Production of Selected Nonfat Dairy Products  
in California, 1925-1945

| Year | Skim milk<br>for human<br>consumption |        | Buttermilk<br>and cul-<br>tured butter-<br>milk for human<br>consumption |        | Cottage,<br>pot, and<br>bakers<br>cheese |        | Evaporated<br>and<br>condensed<br>skim milk |  | Evaporated<br>and<br>condensed<br>buttermilk |  | Nonfat dry milk<br>solids |  | Dry or<br>powdered<br>buttermilk |  | Dry<br>casein |  |
|------|---------------------------------------|--------|--|--------|--|--------|---|--|--|--|---------------------------|--|----------------------------------|--|---------------|--|
|      | 1                                     |        | 2  |        | 3  |        | 4   |  | 5  |  | 6                         |  | 7                                |  | 8             |  |
|      | Thousand gallons                      |        | Thousand pounds  |        | Total                                    |        | For human<br>consumption<br>only            |  | Total  |  | Total                     |  | Total                            |  | Total         |  |
| 1925 | 1,006                                 | 3,939  | 6,820  | 8,813  | 5,352                                    | 17,891 |   |  |  |  |                           |  | 615                              |  | 4,783         |  |
| 1926 | 1,532                                 | 3,431  | 8,173  | 20,087 | 16,628                                   | 26,352 |   |  |  |  |                           |  | 3,124                            |  | 3,570         |  |
| 1927 | 1,276                                 | 3,862  | 9,803  | 9,612  | 6,917                                    | 41,563 |   |  |  |  |                           |  | 2,929                            |  | 4,283         |  |
| 1928 | 1,642                                 | 5,423  | 17,103   | 20,519 | 3,433                                    | 41,798 |   |  |  |  |                           |  | 3,043                            |  | 7,053         |  |
| 1929 | 2,739                                 | 6,239  | 19,282   | 13,430 | 3,398                                    | 46,997 |   |  |  |  |                           |  | 2,639                            |  | 7,613         |  |
| 1930 | 2,133                                 | 6,497  | 19,483   | 13,287 | 3,865                                    | 42,783 |   |  |  |  |                           |  | 6,017                            |  | 11,806        |  |
| 1931 | 1,632                                 | 6,564  | 21,475   | 12,030 | 5,536                                    | 46,416 |   |  |  |  |                           |  | 4,655                            |  | 11,316        |  |
| 1932 | 2,549                                 | 5,867  | 19,617   | 12,893 | 4,943                                    | 45,661 |   |  |  |  |                           |  | 3,213                            |  | 9,454         |  |
| 1933 | 4,151                                 | 5,543  | 19,982   | 12,717 | 4,910                                    | 53,572 |   |  |  |  |                           |  | 3,519                            |  | 9,142         |  |
| 1934 | 1,917                                 | 5,731  | 16,884   | 14,137 | 3,186                                    | 43,120 |   |  |  |  |                           |  | 3,111                            |  | 11,012        |  |
| 1935 | 3,872                                 | 6,356  | 17,843   | 16,926 | 3,268                                    | 43,242 |   |  |  |  |                           |  | 3,045                            |  | 10,537        |  |
| 1936 | 4,655                                 | 8,018  | 19,801   | 22,505 | 4,081                                    | 47,108 |   |  |  |  |                           |  | 2,548                            |  | 11,156        |  |
| 1937 | 5,184                                 | 8,278  | 18,883   | 22,910 | 5,854                                    | 47,120 |   |  |  |  |                           |  | 1,996                            |  | 13,587        |  |
| 1938 | 4,836                                 | 7,994  | 25,265   | 17,943 | 5,923                                    | 59,938 |   |  |  |  |                           |  | 4,036                            |  | 8,698         |  |
| 1939 | 3,902                                 | 9,239  | 30,305   | 20,881 | 6,824                                    | 55,797 |   |  |  |  |                           |  | 2,847                            |  | 9,051         |  |
| 1940 | 5,211                                 | 9,237  | 25,076   | 20,260 | 7,032                                    | 63,466 |   |  |  |  |                           |  | 2,883                            |  | 11,815        |  |
| 1941 | 2,943                                 | 9,804  | 25,302   | 49,629 | 5,012                                    | 57,812 |   |  |  |  |                           |  | 1,264                            |  | 10,501        |  |
| 1942 | 3,791                                 | 10,244 | 25,693   | 39,449 | 5,411                                    | 63,742 |   |  |  |  |                           |  | 1,271                            |  | 7,451         |  |
| 1943 | 2,994                                 | 10,852 | 26,009   | 45,173 | 5,015                                    | 53,453 |   |  |  |  |                           |  | 758                              |  | 3,445         |  |
| 1944 | --                                    | 10,457 | 29,451   | 40,944 | 1,297                                    | 48,005 |   |  |  |  |                           |  | 969                              |  | 3,606         |  |
| 1945 | 3,385                                 | 11,792 | 35,990   | 41,225 | --                                       | 32,119 |   |  |  |  |                           |  | 350                              |  | 2,668         |  |

Continued



Table 13 (Cont'd.)

| Year      | Skim milk<br>for human<br>consumption | Buttermilk<br>and cul-<br>tured butter-<br>milk for human<br>consumption | Cottage,<br>pot, and<br>bakers<br>cheese | Evaporated<br>and<br>condensed<br>skim milk | Evaporated<br>and<br>condensed<br>buttermilk | Nonfat dry milk<br>solids |                                  | Dry or<br>powdered<br>buttermilk | Dry<br>casein |   |   |
|-----------|---------------------------------------|--|--|---|--|---------------------------|----------------------------------|----------------------------------|---------------|---|---|
|           | 1                                     | 2  | 3  | 4   | 5  | Total                     | For human<br>consumption<br>only |                                  |               |   |   |
|           | Thousand gallons                      |  |  |   |  |                           |                                  |                                  |               | 8 | 9 |
|           | Thousand pounds                       |  |  |   |  |                           |                                  |                                  |               |   |   |
| 1925-1929 | 1,639                                 | 4,579  | 12,236                                   | 16,492                                      | 6,146  | 34,920                    |                                  | 2,470                            | 5,460         |   |   |
| 1930-1934 | 2,476                                 | 6,040  | 19,488                                   | 13,013                                      | 4,488  | 46,711                    |                                  | 4,103                            | 10,546        |   |   |
| 1935-1939 | 4,490                                 | 7,977  | 22,419                                   | 20,233                                      | 5,190  | 50,641                    | 35,480                           | 2,884                            | 10,606        |   |   |
| 1940-1944 | 3,735 <sup>a</sup>                    | 10,034   | 26,306                                   | 39,091                                      | 4,953  | 57,296                    | 49,749                           | 1,429                            | 7,344         |   |   |

<sup>a</sup> Four year average, 1940-1943.

Sources of data:

Cols. 1 and 2: Cal. Dept. Agr. Annual Statistical Reports of California Dairy Products.

Cols. 3 to 9: U.S. Dept. Agr. Bur. Agr. Econ. Annual Reports on Manufactured Dairy Products.





Table 14

Percentage Change in Production of Selected Nonfat-Containing Dairy Products in California, 1925-1945

1925 = 100

| Year            | Skim milk<br>for human<br>consumption | Buttermilk<br>and cul-<br>tured butter-<br>milk for human<br>consumption | Cottage,<br>pot, and<br>bakers<br>cheese | Evaporated<br>and<br>condensed<br>skim milk | Evaporated<br>and<br>condensed<br>buttermilk | Nonfat dry milk<br>solids |                                  | Dry or<br>powdered<br>buttermilk | Dry<br>casein |
|-----------------|---------------------------------------|--|--|---|--|---------------------------|----------------------------------|----------------------------------|---------------|
|                 |                                       |  |  |   |  | Total                     | For human<br>consumption<br>only |                                  |               |
| 1925            | 100.0                                 | 100.0  | 100.0                                    | 100.0                                       | 100.0  | 100.0                     |                                  | 100.0                            | 100.0         |
| 1926            | 152.3                                 | 87.1   | 119.8                                    | 341.4                                       | 310.7  | 147.3                     |                                  | 508.0                            | 74.6          |
| 1927            | 126.8                                 | 98.0   | 143.7                                    | 109.1                                       | 129.2  | 232.3                     |                                  | 476.3                            | 89.5          |
| 1928            | 163.2                                 | 137.7  | 250.8                                    | 232.8                                       | 64.1   | 233.6                     |                                  | 494.8                            | 147.5         |
| 1929            | 272.3                                 | 158.4  | 282.7                                    | 152.4                                       | 63.5   | 262.7                     |                                  | 429.1                            | 159.2         |
| 1930            | 212.0                                 | 164.9  | 285.7                                    | 150.8                                       | 72.2   | 239.1                     |                                  | 978.4                            | 246.8         |
| 1931            | 162.2                                 | 166.6  | 314.9                                    | 136.5                                       | 103.4  | 270.6                     |                                  | 756.9                            | 236.6         |
| 1932            | 253.4                                 | 148.9  | 267.6                                    | 146.3                                       | 92.4   | 255.2                     |                                  | 522.4                            | 197.7         |
| 1933            | 412.6                                 | 140.7  | 293.0                                    | 144.3                                       | 91.7   | 299.4                     |                                  | 572.2                            | 191.1         |
| 1934            | 190.6                                 | 145.5  | 247.6                                    | 160.4                                       | 59.5   | 241.0                     |                                  | 505.9                            | 230.2         |
| 1935            | 384.9                                 | 161.4  | 261.6                                    | 192.1                                       | 61.1   | 241.7                     |                                  | 495.1                            | 220.3         |
| 1936            | 462.7                                 | 203.6  | 290.3                                    | 255.4                                       | 76.3   | 263.3                     |                                  | 414.3                            | 233.2         |
| 1937            | 515.3                                 | 210.2  | 276.9                                    | 260.0                                       | 109.4  | 263.4                     |                                  | 324.6                            | 284.1         |
| 1938            | 480.7                                 | 202.9  | 370.5                                    | 203.6                                       | 110.7  | 335.0                     |                                  | 656.3                            | 181.9         |
| 1939            | 387.9                                 | 234.6  | 444.4                                    | 236.9                                       | 127.5  | 311.9                     |                                  | 462.9                            | 189.2         |
| 1940            | 518.0                                 | 234.5  | 367.7                                    | 229.9                                       | 131.4  | 354.7                     |                                  | 468.8                            | 247.0         |
| 1941            | 292.5                                 | 248.9  | 371.0                                    | 563.1                                       | 112.3  | 323.1                     |                                  | 205.5                            | 219.5         |
| 1942            | 376.8                                 | 260.1  | 376.7                                    | 447.6                                       | 101.1  | 356.3                     |                                  | 206.7                            | 155.8         |
| 1943            | 297.6                                 | 275.5  | 381.4                                    | 512.6                                       | 93.7   | 298.8                     |                                  | 123.3                            | 72.0          |
| 1944            | --                                    | 265.5  | 431.8                                    | 464.6                                       | 24.2   | 266.3                     |                                  | 157.6                            | 75.4          |
| 1945            | 336.5                                 | 299.4  | 527.7                                    | 467.8                                       | --   | 179.5                     |                                  | 56.9                             | 55.8          |
| 1925-1929 = 100 |                                       |  |  |   |  |                           |                                  |                                  |               |
| 1925-1929       | 100.0                                 | 100.0  | 100.0                                    | 100.0                                       | 100.0  | 100.0                     |                                  | 100.0                            | 100.0         |
| 1930-1934       | 151.1                                 | 131.9  | 159.2                                    | 78.9  | 73.0   | 133.8                     |                                  | 166.1                            | 193.1         |
| 1935-1939       | 273.9                                 | 174.2  | 183.2                                    | 122.7                                       | 84.4   | 145.0                     |                                  | 116.8                            | 194.2         |
| 1940-1944       | 227.9                                 | 219.1  | 215.0                                    | 237.0                                       | 80.6   | 164.1                     |                                  | 57.9                             | 134.9         |

Source of data: Table 13.



Table 15

Per Capita Production of Selected Nonfat-Containing  
Dairy Products in California, 1925-1945

| Year      | Skim milk<br>for human<br>consumption | Buttermilk<br>and cul-<br>tured butter-<br>milk for human<br>consumption | Cottage,<br>pot, and<br>bakers<br>cheese | Evaporated<br>and<br>condensed<br>skim milk | Evaporated<br>and<br>condensed<br>buttermilk | Nonfat dry milk<br>solids |                                  | Dry or<br>powdered<br>buttermilk casein |
|-----------|---------------------------------------|--|--|---|--|---------------------------|----------------------------------|---|
|           |                                       |  |  |   |  | Total                     | For human<br>consumption<br>only |   |
|           | Gallons                               |  |  |   |  | Pounds                    |                                  |   |
| 1925      | .22                                   | .85  | 1.47                                     | 1.90  | 1.15   | 3.86                      | .13                              | 1.03                                    |
| 1926      | .32                                   | .71  | 1.68                                     | 6.20  | 3.43   | 5.43                      | .64                              | .74                                     |
| 1927      | .25                                   | .76  | 1.93                                     | 1.89  | 1.36   | 8.19                      | .58                              | .84                                     |
| 1928      | .31                                   | 1.02   | 3.23                                     | 3.88  | .65  | 7.90                      | .57                              | 1.33                                    |
| 1929      | .50                                   | 1.13   | 3.50                                     | 2.44  | .62  | 8.52                      | .48                              | 1.38                                    |
| 1930      | .37                                   | 1.14   | 3.41                                     | 2.33  | .68  | 7.49                      | 1.05                             | 2.07                                    |
| 1931      | .28                                   | 1.13   | 3.69                                     | 2.07  | .95  | 8.31                      | .80                              | 1.94                                    |
| 1932      | .43                                   | 1.00   | 3.33                                     | 2.19  | .84  | 7.75                      | .55                              | 1.60                                    |
| 1933      | .70                                   | .93  | 3.35                                     | 2.13  | .82  | 8.98                      | .59                              | 1.53                                    |
| 1934      | .32                                   | .95  | 2.79                                     | 2.33  | .53  | 7.12                      | .51                              | 1.82                                    |
| 1935      | .63                                   | 1.03   | 2.89                                     | 2.74  | .53  | 7.00                      | .49                              | 1.71                                    |
| 1936      | .73                                   | 1.26   | 3.12                                     | 3.55  | .64  | 7.43                      | .40                              | 1.76                                    |
| 1937      | .79                                   | 1.27   | 2.89                                     | 3.51  | .90  | 7.22                      | .31                              | 2.08                                    |
| 1938      | .73                                   | 1.20   | 3.80                                     | 2.70  | .89  | 9.01                      | .61                              | 1.31                                    |
| 1939      | .58                                   | 1.36   | 4.47                                     | 3.08  | 1.01   | 8.22                      | .42                              | 1.33                                    |
| 1940      | .75                                   | 1.33   | 3.60                                     | 2.91  | 1.01   | 9.11                      | .41                              | 1.70                                    |
| 1941      | .41                                   | 1.36   | 3.50                                     | 6.87  | .83  | 8.00                      | .17                              | 1.45                                    |
| 1942      | .49                                   | 1.34   | 3.35                                     | 5.15  | .71  | 8.32                      | .17                              | .97                                     |
| 1943      | .35                                   | 1.28   | 3.07                                     | 5.33  | .59  | 6.31                      | .09                              | .41                                     |
| 1944      | --                                    | 1.19   | 3.36                                     | 4.68  | .15  | 5.48                      | .11                              | .41                                     |
| 1945      | .38                                   | 1.34   | 4.08                                     | 4.67  | --   | 3.64                      | .04                              | .30                                     |
| 1925-1929 | .32                                   | .90  | 2.41                                     | 3.25  | 1.21   | 6.88                      | .49                              | 1.06                                    |
| 1930-1934 | .42                                   | 1.03   | 3.31                                     | 2.21  | .76  | 7.93                      | .70                              | 1.79                                    |
| 1935-1939 | .69                                   | 1.23   | 3.45                                     | 3.11  | .80  | 7.79                      | .44                              | 1.63                                    |
| 1940-1944 | .48                                   | 1.28   | 3.36                                     | 5.00  | .63  | 7.33                      | .18                              | .94                                     |

Source of data: Tables 1 and 13.





Table 17

Percentage Change in Production of Selected Nonfat-  
Containing Dairy Products in the United States

1925 = 100

| Year | Cottage, pot,<br>and bakers<br>cheese | Nonfat, dry milk solids |                               | Casein | Dried or<br>produced<br>buttermilk | Condensed or<br>evaporated<br>buttermilk |
|------|---------------------------------------|-------------------------|-------------------------------|--------|------------------------------------|--|
|      |                                       | Total                   | For human<br>consumption only |        |                                    |  |
| 1925 | 100.0                                 | 100.0                   |                               | 100.0  | 100.0                              | 100.0                                    |
| 1926 | 114.3                                 | 125.1                   |                               | 101.8  | 155.4                              | 112.5                                    |
| 1927 | 127.2                                 | 161.1                   |                               | 106.4  | 190.1                              | 128.7                                    |
| 1928 | 147.1                                 | 201.9                   |                               | 133.7  | 225.2                              | 132.9                                    |
| 1929 | 159.5                                 | 283.2                   |                               | 183.7  | 268.3                              | 139.2                                    |
| 1930 | 164.0                                 | 355.7                   |                               | 255.0  | 319.8                              | 125.0                                    |
| 1931 | 170.8                                 | 357.3                   |                               | 212.7  | 250.0                              | 84.2                                     |
| 1932 | 173.9                                 | 368.6                   |                               | 147.0  | 241.1                              | 67.7                                     |
| 1933 | 169.6                                 | 393.0                   |                               | 145.2  | 263.9                              | 65.1                                     |
| 1934 | 173.4                                 | 402.3                   |                               | 224.7  | 265.3                              | 85.2                                     |
| 1935 | 184.2                                 | 405.9                   |                               | 226.5  | 246.5                              | 91.4                                     |
| 1936 | 201.7                                 | 476.8                   |                               | 277.7  | 251.5                              | 116.2                                    |
| 1937 | 222.5                                 | 507.2                   |                               | 406.6  | 262.9                              | 114.0                                    |
| 1938 | 240.8                                 | 613.0                   |                               | 292.2  | 316.3                              | 116.1                                    |
| 1939 | 280.2                                 | 557.2                   |                               | 246.4  | 307.9                              | 135.3                                    |
| 1940 | 292.9                                 | 657.3                   |                               | 280.7  | 336.1                              | 145.0                                    |
| 1941 | 315.3                                 | 650.1                   |                               | 284.9  | 374.3                              | 166.3                                    |
| 1942 | 324.4                                 | 854.8                   |                               | 254.8  | 344.6                              | 220.5                                    |
| 1943 | 359.5                                 | 728.4                   |                               | 110.3  | 302.0                              | 217.0                                    |
| 1944 | 381.2                                 | 817.1                   |                               | 89.8   | 280.2                              | 203.4                                    |
| 1945 | ---                                   | 902.2                   |                               | 71.7   | 240.1                              | 206.1                                    |

Source of data: Table 16.

| No. | Name         | Age | Sex    | Religion  | Profession | Remarks  |
|-----|--------------|-----|--------|-----------|------------|----------|
| 1   | John Doe     | 25  | Male   | Christian | Teacher    | Single   |
| 2   | Jane Smith   | 30  | Female | Jewish    | Nurse      | Married  |
| 3   | Robert Brown | 45  | Male   | Muslim    | Engineer   | Divorced |
| 4   | Mary White   | 22  | Female | Hindu     | Student    | Single   |
| 5   | David Black  | 35  | Male   | Buddhist  | Artist     | Married  |

Table 18

Per Capita Production of Nonfat - Containing  
Dairy Products in the United States

| Year   | Cottage, pot,<br>and bakers<br>cheese | Nonfat, dry milk solids |                               | Casein | Dried or<br>produced<br>buttermilk | Condensed or<br>evaporated<br>buttermilk |
|--------|---------------------------------------|-------------------------|-------------------------------|--------|------------------------------------|--|
|        |                                       | Total                   | For human<br>consumption only |        |                                    |  |
| Pounds |                                       |                         |                               |        |                                    |  |
| 1925   | .52                                   | .64                     |                               | .14    | .18                                | .67                                      |
| 1926   | .58                                   | .79                     |                               | .15    | .27                                | .74                                      |
| 1927   | .64                                   | 1.00                    |                               | .15    | .32                                | .84                                      |
| 1928   | .73                                   | 1.23                    |                               | .19    | .38                                | .86                                      |
| 1929   | .78                                   | 1.71                    |                               | .25    | .45                                | .88                                      |
| 1930   | .79                                   | 2.12                    |                               | .34    | .52                                | .78                                      |
| 1931   | .82                                   | 2.11                    |                               | .28    | .41                                | .52                                      |
| 1932   | .83                                   | 2.16                    |                               | .20    | .39                                | .42                                      |
| 1933   | .80                                   | 2.29                    |                               | .19    | .42                                | .40                                      |
| 1934   | .82                                   | 2.33                    |                               | .30    | .42                                | .52                                      |
| 1935   | .86                                   | 2.34                    | 1.47                          | .30    | .39                                | .55                                      |
| 1936   | .94                                   | 2.73                    | 1.75                          | .36    | .40                                | .70                                      |
| 1937   | 1.03                                  | 2.89                    | 1.90                          | .52    | .41                                | .68                                      |
| 1938   | 1.10                                  | 3.46                    | 2.23                          | .37    | .49                                | .69                                      |
| 1939   | 1.27                                  | 3.12                    | 2.05                          | .31    | .48                                | .80                                      |
| 1940   | 1.32                                  | 3.65                    | 2.44                          | .35    | .51                                | .85                                      |
| 1941   | 1.41                                  | 3.58                    | 2.75                          | .36    | .57                                | .96                                      |
| 1942   | 1.44                                  | 4.69                    | 4.23                          | .32    | .52                                | 1.27                                     |
| 1943   | 1.57                                  | 3.91                    | 3.73                          | .13    | .45                                | 1.23                                     |
| 1944   | 1.64                                  | 4.34                    | 4.22                          | .11    | .41                                | 1.14                                     |
| 1945   | --                                    | 4.73                    | 4.60                          | .09    | .35                                | 1.14                                     |

Source of data: Tables 1 and 16.

| 1911 |   |   | 1912 |   |   |
|------|---|---|------|---|---|
| Jan  | 1 | 1 | Jan  | 1 | 1 |
| Feb  | 1 | 1 | Feb  | 1 | 1 |
| Mar  | 1 | 1 | Mar  | 1 | 1 |
| Apr  | 1 | 1 | Apr  | 1 | 1 |
| May  | 1 | 1 | May  | 1 | 1 |
| Jun  | 1 | 1 | Jun  | 1 | 1 |
| Jul  | 1 | 1 | Jul  | 1 | 1 |
| Aug  | 1 | 1 | Aug  | 1 | 1 |
| Sep  | 1 | 1 | Sep  | 1 | 1 |
| Oct  | 1 | 1 | Oct  | 1 | 1 |
| Nov  | 1 | 1 | Nov  | 1 | 1 |
| Dec  | 1 | 1 | Dec  | 1 | 1 |

Table 19

## Estimated Percentage Utilization of Commercial Milk Production -- California

| Year | Market<br>milk | Market<br>cream | Butter | Cheese | Evaporated<br>and<br>condensed<br>milk | Ice cream | Miscellaneous |
|------|----------------|-----------------|--------|--------|--|-----------|---------------|
| 1925 | 26.0           | 9.0             | 48.0   | 1.9    | 8.0                                    | 5.0       | 2.1           |
| 1926 | 27.6           | 11.6            | 46.1   | 1.6    | 8.3                                    | 4.7       | 0.1           |
| 1927 | 28.8           | 9.2             | 43.4   | 1.9    | 9.4                                    | 4.6       | 2.7           |
| 1928 | 29.5           | 9.6             | 42.3   | 2.0    | 8.5                                    | 4.9       | 3.2           |
| 1929 | 29.9           | 10.4            | 39.5   | 1.9    | 9.1                                    | 5.1       | 4.1           |
| 1930 | 29.0           | 10.6            | 39.2   | 1.9    | 9.6                                    | 4.7       | 5.0           |
| 1931 | 29.3           | 11.0            | 38.7   | 1.9    | 10.0                                   | 4.4       | 4.7           |
| 1932 | 27.7           | 11.1            | 39.5   | 2.4    | 10.8                                   | 3.3       | 5.2           |
| 1933 | 26.2           | 9.8             | 40.9   | 3.3    | 11.3                                   | 3.0       | 5.5           |
| 1934 | 28.1           | 10.1            | 38.4   | 3.2    | 10.3                                   | 3.8       | 6.1           |
| 1935 | 30.1           | 11.3            | 35.7   | 3.2    | 11.1                                   | 4.3       | 4.3           |
| 1936 | 29.0           | 11.6            | 34.2   | 3.2    | 11.3                                   | 4.7       | 6.0           |
| 1937 | 31.8           | 11.3            | 34.4   | 3.4    | 8.6                                    | 4.8       | 5.7           |
| 1938 | 31.9           | 12.5            | 34.6   | 3.4    | 9.0                                    | 4.8       | 3.8           |
| 1939 | 31.8           | 13.2            | 32.2   | 2.7    | 9.7                                    | 5.9       | 4.5           |
| 1940 | 32.0           | 12.6            | 31.8   | 2.5    | 11.1                                   | 5.7       | 4.3           |
| 1941 | 33.5           | 12.1            | 27.9   | 2.7    | 15.4                                   | 6.4       | 2.0           |
| 1942 | 38.6           | 10.1            | 22.0   | 2.8    | 12.3                                   | 7.7       | 5.5           |
| 1943 | 50.7           | 3.6             | 10.5   | 2.5    | 11.6                                   | 6.2       | 8.9           |
| 1944 | 47.0           | 5.2             | 12.2   | 1.8    | 14.4                                   | 6.9       | 12.5          |
| 1945 | 49.3           | 7.5             | 6.0    | 2.0    | 13.8                                   | 8.5       | 12.9          |

Source of data: California Dept. of Agr. Statistical Report for California Dairy Products. Issues 1925-1945.



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